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Veenstra, R.; Lindenberg, S.M.; Zijlstra, B.J H; De Winter, A.F.; Verhulst, F.C.; Ormel, J.

Published in:
Child Development

DOI:
10.1111/j.1467-8624.2007.01102.x

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2007

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):
Veenstra, R., Lindenberg, S. M., Zijlstra, B. J. H., De Winter, A. F., Verhulst, F. C., & Ormel, J. (2007). The dyadic nature of bullying and victimization: Testing a dual-perspective theory. *Child Development*, *78*(6), 1843-1854. https://doi.org/10.1111/j.1467-8624.2007.01102.x

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Child Development, November/December 2007, Volume 78, Number 6, Pages 1843 – 1854

The Dyadic Nature of Bullying and Victimization: Testing a Dual-Perspective Theory

René Veenstra and Siegwart Lindenberg
University of Groningen

Bonne J. H. Zijlstra
University of Amsterdam

Andrea F. De Winter
University Medical Center Groningen and University of Groningen

Frank C. Verhulst
Erasmus Medical Center

Johan Ormel
University Medical Center Groningen and University of Groningen

For this study, information on *Who Bullies Who* was collected from 54 school classes with 918 children (*M* age = 11) and 13,606 dyadic relations. Bullying and victimization were viewed separately from the point of view of the bully and the victim. The two perspectives were highly complementary. The probability of a bully–victim relationship was higher if the bully was more dominant than the victim, and if the victim was more vulnerable than the bully and more rejected by the class. In a bully–victim dyad, boys were more often the bullies. There was no finding of sex effect for victimization. Liking reduced and disliking increased the probability of a bully–victim relationship.

Bullying and victimization have been important subjects in developmental studies. However, there is still a lack of dyadic studies of bullying and victimization. Despite recognition that bullying occurs disproportionately in specific dyads (Coie et al., 1999; Olweus, 1978), not much is known about these relationships in terms of interaction and in terms of typical characteristics of each partner in the dyad. This study focuses on the latter. Bully – victim dyads are embedded in a larger context, in terms of disapproval, rejection, and so on. Together with characteristics of the individuals themselves, this larger context is likely to leave its mark on the characteristics of typical dyads.

Children are routinely classified as bullies and victims, but rarely is it known which bullies harass which victims (Rodkin & Berger, in press). Some children have a tendency to be involved in bullying, as a bully, a victim, or a bully – victim (Schwartz, 2000), but the question is, with whom? Relationships come from two sides and approval or disapproval from others may encourage or discourage children involved in bullying. Do self-proclaimed bullies have typical kinds of victims? Do self-proclaimed victims have typical kinds of persons who they identify as bullying them? What is the association of bullying with other peer adversities, such as rejection and isolation (see also Salmivalli & Isaacs, 2005)? Once bullying and victimization are considered from such an embedded dyadic point of view, another possibility arises. It is possible that the process that leads adolescents to bully certain others differs from the process that leads victims to feel bullied by certain others. Do the subjective experiences of bullying and of being bullied match? How could one generate expectations and how could one test them? These

This research is part of the Tracking Adolescents' Individual Lives Survey (TRAILS). Participating centers of TRAILS include various Departments of the University of Groningen, the Erasmus Medical Center of Rotterdam, the Radboud University of Nijmegen, University of Utrecht, and the Trimbos Institute, the Netherlands. TRAILS is financially supported by grants from the Netherlands Organization for Scientific Research (GB-MW 940-38-011, GB-MAGW 480-01-006, GB-MAGW 457-03-018, NWO 175.010.2003. 005, ZonMw 100-001-001, ZonMw 60-60600-98-018), the Ministry of Justice (WODC), and by the participating centers. We are grateful to Ernest V. E. Hodges and Sijmen A. Reijneveld for their useful comments on this article. Earlier versions were presented at the biennial meeting of the Society for Research on Adolescence, San Francisco, CA, March 2006, at a NSF-Sponsored Conference on Modeling Interdependent Data in Developmental Psychology, Lawrence, KA, June 2006, and at the biennial meeting of the International Society for the Study of Behavioral Development, Melbourne, Australia, July 2006.

Correspondence concerning this article should be addressed to René Veenstra, Interuniversity Center for Social Science Theory and Methodology, University of Groningen, Grote Rozenstraat 31, 9712 TG Groningen, the Netherlands. Electronic mail may be sent to d.r.veenstra@rug.nl.

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questions suggest the use of a dual-perspective approach that looks at bullying from the points of view of both the self-proclaimed bully and the self-proclaimed victim, and they suggest a statistical approach that can handle dyads in a multilevel context. The main goal of the current study was to formulate such a dual-perspective theory of bullying and victimization and to test it using network analyses that identify the covariates of the nominator (i.e., the self-proclaimed bully or victim) and the target (i.e., the person nominated as bully or victim) in dyadic relationships.

With our dyadic approach, it was not our aim to deny the importance of the group as a context of bullying (Atlas & Pepler, 1998; Salmivalli, Lagerspetz, Björkqvist, Osterman, & Kaukiainen, 1996; Whitney & Smith, 1993), but we believe that, for an understanding of bully–victim relations in a peer context, much can be learned from having a closer look at the covariates of both partners in dyadic relationships, seen as joint effects of both individual and group influences.

A Dual-Perspective Theory of Bullying

In order to get a better understanding of the *dyadic* nature of the bully–victim relationship, it seems plausible to consider the possibility that the subjective experiences of bullying and being bullied may or may not match. Bullies and their targets often have different intentions and perceptions of an act (Kowalski, 2000; Shapiro, Baumeister, & Kessler, 1991). When bullying is viewed in terms of dyadic relationships, two kinds of dyadic information are obtained: from the self-proclaimed bully (''Who do you bully?'') and from the self-proclaimed victim (''By whom are you bullied?'').

The bullying relationship has been called asymmetric by definition (Olweus, 1993). Olweus stated that the term bullying should not be used when two children of the same strength are fighting or quarrelling. It is likely that for youth, the term bullying also implies a power imbalance, referring to status goals for potential bullies and protective goals for potential victims (Salmivalli, 2001). We focused on the points of view of the self-proclaimed bully and the self-proclaimed victim. We purposely treated children nominated as bully–victim separately (Schwartz, 2000).

To predict who bullies who and why, we used a goal-framing approach (Lindenberg, 2006) in which, it is not only the substantive content of a goal that is crucial for action but also the fact that an activated goal will make a person more sensitive to opportunities for its realization (Klinger, 1975). Conversely, the goal may become activated merely by exposure to an opportunity to realize it (Shah & Kruglanski, 2003). In the literature on victimization, this insight has long been used (see e.g., Miethe & McDowall, 1993). If self-proclaimed bullies have domination as their major goal, they will spot victims that can easily be dominated. Conversely, if self-proclaimed victims have as major goal to avoid harm, they will spot others who are likely to hurt them. The stronger the goal, the more likely that it will create this double sensitivity: a keen awareness of opportunities to realize the activated goal and a readiness to have the goal activated by detecting opportunities to realize it. In this paper, we did not directly assess goals and sensitivities. However, using this theory, we arrive at testable hypotheses about the characteristics of self-proclaimed bullies and their targets.

The point of view of the bully. Hawley (1999) posits that children bully weaker children to gain, among other things, higher status among peers. In addition, status striving has been identified as one of the ubiquitous human goals (Barkow, 1989; Huberman, Loch, & Önçüler, 2004; Lindenberg, 2001). It seems warranted, therefore, to take striving to improve one's status as the major substantive goal for the self-proclaimed bully. There are two aspects to the status goal (see also Gilbert & McGuire, 1998; Whiting & Edwards, 1973). On the one hand, there is a need for domination, and on the other hand, there is a need to get social approval for being special in comparison to others (popularity). Research by Vaillancourt, Hymel, and McDougall (2003) has shown that both power differences (referring to children who have power over others, who can pressure others into doing things) and status differences (referring to children who are most popular) are key aspects of bullying. If the domination component is relatively strong (in comparison to the social approval component), then it is likely that children bully to experience and show their domination over other children. This goal orientation makes it likely that the bullies' skills are first of all related to achieving domination, not to the question whether or not they are considered socially competent by others (Arsenio & Lemerise, 2001). However, the bully will not needlessly sacrifice social approval, which opens the door for group influence on bullying.

A number of points follow from the goal-framing approach for the characteristics of the self-proclaimed bully and the characteristics of their victims. First, children with a high score on dominant aggressiveness are more likely to have the goal to be dominant as a focal goal than children with a low score (cf. Hawley, 2003; LaFontana & Cillessen, 2002; Rodkin, Farmer,

Pearl, & Van Acker, 2000). Because boys are generally more aggressive than girls, self-proclaimed bullies are more likely to be boys than girls. This is also supported by the finding that bully – victim relationships are dyads in which boys are usually the aggressors and boys or girls the victims (Espelage, Mebane, & Adams, 2004; Hanish & Guerra, 2004; Klicpera & Gasteiger Klicpera, 1996; Pellegrini, Bartini, & Brooks, 1999; Salmivalli, 2001; Schwartz, 2000; Vermande, Van den Oord, Goudena, & Rispens, 2000). Second, potential bullies have a keen eye for victims that help them realize their dual status goals. Potential bullies are thus likely to spot children who are vulnerable and therefore offer a high probability of letting themselves be dominated. Because bullies are also not likely to trade social approval for domination if both can be had simultaneously—at times, they may even get social approval from bystanders (O'Connell, Pepler, & Craig, 1999)—we expected them to be keenly aware of other children's lack of social support. In short, having the goals to be dominant and to get social approval, the potential bully spots who is vulnerable and rejected by others. Thus, from the point of view of the bully, our *bully – victim profile hypotheses* are the following: self-proclaimed bullies are likely to be (a) boys and (b) dominantly aggressive; and their victims are likely to be (c) vulnerable, (d) rejected, and (e) not aggressive.

The point of view of the victim. The goals of the victims are likely to be different. Children who feel vulnerable (i.e., feel easily hurt by others, cannot make others listen to them, feel isolated) are more likely than children who feel less vulnerable to have the focal goal of harm avoidance (cf. Juvonen & Graham, 2001; Olweus, 1978; Perry, Williard, & Perry, 1990). Such children are likely to be aware of other children who are more aggressive and less vulnerable than they are and who are, therefore, a potential threat. They may view interpersonal situations as stressful and anxiety producing. Avoidance evoked by fear or wariness may be the result (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-Laforce, 2006). This is likely to signal their vulnerability to those who are at least moderately interested in domination (Boldizar, Perry, & Perry, 1989; Salmivalli & Isaacs, 2005), thereby triggering dominant behavior also in classmates who would otherwise not show it. Because of the ''low power'' situation of self-proclaimed victims, it is likely that status goals are more or less inhibited, which makes the goal to escape harm even more prominent (Keltner, Gruenfeld, & Anderson, 2003). Finally, because boys are generally more dominantly aggressive than girls, self-proclaimed victims can be expected mostly to be bullied by boys. In sum, from the point of view of the victim, our *victim – bully profile hypotheses* are the following: self-proclaimed victims are likely to be (a) vulnerable, (b) rejected, and (c) not aggressive; and they are matched with bullies who are likely to be (d) boys, (e) dominantly aggressive, and (f) not vulnerable. As can be seen, the hypotheses about the profiles of bully – victim relationships are almost identical from both points of view. This implies a strong reciprocal effect on the formation of bully – victim dyads.

Hypothesis about bully – victims. The goal-framing approach also leads to expectations about children who are both bullies and victims. It is likely that these children have neither a clear dominance nor a clear harm avoidance goal (possibly due to other goals) or that their goals are conflicting. If this is right, they cannot easily identify their own actions and experiences as either bullying or being bullied. Thus, if they turn up in the nomination process, it will be likely to be as a target rather than as a nominator. Confirmation of this conjecture can also be taken to be indirect evidence about the importance of goals for understanding bully – victim relationships.

Relational Hypotheses from Both Points of View

Liking and disliking are personal feelings, in contrast to being accepted or rejected which reflects what others feel. Own feelings may fuel or inhibit the goal to be dominant and the goal to avoid harm. Thus, we also included *liking and disliking* and expected that liking a person would be negatively related to both an existing desire to dominate this person and the likelihood of reporting that one is being bullied by the liked person (Keltner, Young, Heerey, Oemig, & Monarch, 1998). Conversely, we expected that disliking a person would be positively related to both the existing desire to dominate this person and the likelihood of reporting that one is being bullied by the disliked person (Card & Hodges, 2007; Peets, Hodges, & Salmivalli, in press).

With regard to same-sex or cross-sex bully – victim dyads we can formulate two alternative hypotheses. First, it has been found that bullying is more often directed toward children of the same sex than toward children of the other sex (Pellegrini & Long, 2002). Rodkin and Berger (in press) found that boys who harass boys receive even more approval or prestige than boys who harass girls. Together with the assumption that boys are more often self-proclaimed bullies than girls (see above), this leads to the expectation that boy – boy bully – victim relationships would be more likely than girl – girl or mixed-sex pairs. Second, a conflicting hypothesis would be generated

if we consider that girls are less aggressive and more vulnerable than boys, and consequently, this power differential is likely to play an important role for the bully in choosing the victim. This should lead to a prevalence of boy – girl dyads.

The Present Study

Bullying and victimization were assessed using peer nominations, in which children nominated who they bully (the targets are victims) and nominated those by whom they are bullied (the targets are bullies). We formulated hypotheses about characteristics of nominators, their targets, and the relationship level of the dyads. The notion that bullies seek social status gains through dominant aggression is particularly relevant in (pre)adolescence. We used data from 54 classes with 918 preadolescents and 13,606 dyadic relations. The cross-sectional nature of our correlational design does not allow causal conclusions even though the hypotheses are derived from causal goal-framing mechanisms. We thus, cannot exclude the possibility that even if the hypotheses bear out, characteristics of bullies and victims may take shape as a consequence rather than a cause of the relationship.

We adopted a new statistical model: the p_2 model (Van Duijn, Snijders, & Zijlstra, 2004; Zijlstra, Van Duijn, & Snijders, 2006). The advantage of the p_2 model is that it allows us to study the covariates of nominators and their targets, as well as purely dyadic effects (such as the sex of the pair) with a special multivariate analysis (which deals with the fact that the observations are not all independent) in a multilevel framework (individual, dyad, class).

Method

Sample

The present study was part of the first assessment wave of Tracking Adolescents' Individual Lives Survey (TRAILS), which ran from March 2001 to July 2002. TRAILS is designed to chart and explain the development of mental health and social development from preadolescence into adulthood. The TRAILS target sample consisted of preadolescents living in five municipalities in the north of the Netherlands, including both urban and rural areas (De Winter et al., 2005; Oldehinkel, Hartman, De Winter, Veenstra, & Ormel, 2004; Veenstra, Lindenberg, Oldehinkel, De Winter, & Ormel, 2006). Of the children approached for enrollment in the study (selected by the municipalities and attending a school that was willing to participate; N = 3,145 children from 122 schools, response of schools 90.4%), 6.7% were excluded because of incapability or language problems. Of the remaining 2,935 children, 76.0% were enrolled in the study, yielding N = 2,230 (consent to participate: both child and parent agreed). No participation bias was found in our study for the estimation of the prevalence rates of psychopathology, including antisocial behavior. However, boys, children from lower social strata, and children with worse school performance were less likely to participate (De Winter et al., 2005).

Well-trained interviewers visited one of the parents (preferably the mother, 95.6%) at home to administer an interview covering a wide range of topics, including the child's developmental history and somatic health, parental psychopathology, and care utilization. The parent was also asked to fill out a questionnaire. Children filled out questionnaires at school, in class, under the supervision of one or more TRAILS assistants. In addition, intelligence and a number of biological and neurocognitive parameters were assessed individually (also at school). Teachers were asked to fill out a brief questionnaire for all TRAILS children in their class. The measures that were used are described more extensively below.

Subsample With Peer and Teacher Information

We used a subsample of the TRAILS respondents for the analyses. Peer nominations, which were essential for our study, were only assessed in classes with at least ten TRAILS respondents. Many children had less than ten TRAILS classmates because our sample is a birth cohort. Children in special education or in small schools, and children who repeated or skipped a grade were excluded from the subsample (Veenstra et al., 2005). Children with missing teacher data (13.9% of the 1,065 children with peer data) were also excluded. The remaining subsample of 918 children (M age: 11.00, SD = .48; sex: 56.0% girls; ethnicity: 8.3% children who had at least one parent born in a non-Western country; parent education: 32.5% of children had a father and 33.5% a mother with a low educational level, at maximum, a certificate for a lower track of secondary education) differed from the other TRAILS respondents in several individual and psychosocial characteristics: they were more often girls, $\chi^2(1, N = 2{,}230) = 15.7$, $p < .01$; came on average from higher socioeconomic strata, $t(2186) = 5.0$, $p < .01$; had lived more often with the same parents throughout their lives, $\chi^2(1, N = 2{,}230) = 14.1$, $p < .01$; had a higher level of academic performance, $t(1923) = 3.2$, $p < .01$; and were more prosocial,

$t(1926) = 4.2$, $p < .01$; less aggressive, $t(1927) = -3.5$, $p < .01$; and less isolated, $t(1927) = -4.4$, $p < .01$. In sum, the findings can only be generalized to a population of preadolescents who attend regular elementary schools and did not repeat grades.

Measures

Bully–victim dyads. The children received a list of all classmates and were asked to nominate them on bullying and victimization, among other things. The number of nominations they could make was unlimited, and the questions were asked at the dyadic level. Thus, we have bidirectional information on the relations of each pair of children in a class. Children were not required to nominate anyone. No definition of bullying was provided to the children, as we wanted to enhance the likelihood that differences in perspectives of bullying and victimization would come to the fore.

Our information was based on two items: ''Who do you bully?'' and ''By whom are you bullied?'' In the multilevel analyses, our measures can be seen as the aggregates of all the nominations a person gave to others (as nominator) or received from others (as target) and are for that reason potentially more reliable and valid than a self-report (Cornell & Brockenbrough, 2004; Newcomb, Bukowski, & Pattee, 1993; Salmivalli, 2001). Children claimed more often to be a victim than a bully, $t(917) = 5.3$, $p < .01$.

Nominator and target covariates. In close consultation with Masten, we adapted the Revised Class Play instrument (Masten, Morison, & Pellegrini, 1985). We used the Class Play instrument as a teacher, instead of peer, assessment measure with a 5-point response scale (rating each child on a range from not applicable to very clearly or frequently applicable). This resulted in reliable measures. Dominant aggressiveness (Aggressiveness/Disruptiveness) was measured using six items and had an internal consistency of .89. Sample items were ''I see the pupil as wanting to be dominant,'' as ''interrupting others,'' or as ''fighting.'' Vulnerability (Isolation/Sensitivity) was measured using six items and had an internal consistency of .80. Sample items were ''I see this pupil as being easily hurt,'' as ''unable to make others listen,'' or as ''having difficulty making friends.''

The number of nominations children received individually from their classmates with regard to ''best friends'' and ''dislike'' was used to create measures of peer acceptance and peer rejection, and these measures were used as individual covariates. The measures were the aggregates of all the dyadic nominations a person received from others. After the numbers of nominations children received had been added up, proportions were calculated to take differences in the number of respondents per class into account, yielding scores from 0 to 1. Sex was also included as a covariate. Finally, we also took into account whether a child was a bully–victim: 92 of the 918 children belonged to that category. Being a bully–victim was defined as being in the upper quartile for nominations for bullying as well as victimization (see also Veenstra et al., 2005).

Relationship covariates. We took four network characteristics into account and examined whether bully–victim relationships would be more likely when the nominator disliked the target and less likely when the nominator liked (i.e., named as a best friend) the target. Furthermore, we included covariates to measure whether nominator and target had a different sex (mixed-sex) or were both boys.

Results

Table 1 shows the zero-order correlations for boys and girls. As can be seen, there is an imperfect match between saying one is a bully and being nominated as a bully ($r = .21$ for girls and $r = .29$ for boys). A similar effect can be observed for saying one is a victim and being nominated as a victim ($r = .31$ for girls and $r = .20$ for boys). All correlations were similar for girls and boys with one notable exception. The correlation between being nominated as a victim and peer rejection was higher for girls (.43) than for boys (.25), $z = 2.89$, $p < .01$.

p_2 Analyses

Our dependent variables were dyadic, as revealed by the questions ''who do you bully?'' and ''by whom are you bullied?''. Our independent variables were at the individual level (nominator and target covariates), with 918 observations, and at the dyadic level (relationship covariates), with 13,606 observations. For the analysis of a network containing binary relationships, we used the p_2 model (Van Duijn et al., 2004). The p_2 model incorporates both the class, the individual, and the dyadic level. The different dyads have different parameters depending on the actors i (nominator) and j (target) involved in the dyad. The p_2 model was developed to explain the relationships between actors in a network using characteristics that are central to our hypotheses: characteristics of nominators, targets, and dyads (see also Baerveldt, Van Duijn, Vermeij, & Van Hemert, 2004). It regards nominator and target effects as latent

Table 1
Correlations Between Bullying, Victimization, and Individual Characteristics

	Aggressiveness	Vulnerability	Acceptance	Rejection	Nominated bullying	Nominated victimization	Self-bullying	Self-victimization
Aggressiveness	—	.27*	−.01	.24*	.26*	.11	.18*	.17*
Vulnerability	.38*	—	−.37*	.27*	−.02	.23*	.11	.22*
Acceptance	−.13	−.32*	—	−.32*	.05	−.12	.08	−.10
Rejection	.36*	.36*	−.45*	—	.31*	.43*	.09	.24*
Nominated bullying	.34*	.08	−.06	.34*	—	.08	.21*	−.04
Nominated victimization	.02	.23*	−.13	.25*	−.05	—	.08	.31*
Self-bullying	.20*	.02	.05	.07	.29*	−.03	—	.41*
Self-victimization	.14	.26*	−.05	.15*	.08	.20*	.31*	—

Note. Correlations for girls ($N = 480$) above and for boys ($N = 346$) below the diagonal; 92 bully–victims were excluded from these analyses.
*$p < 0.01$.

(i.e., unobserved) random variables. These latent variables can be explained by nominator- and target characteristics. Dyadic characteristics (relationship covariates) can also be included in the p_2 model. The p_2 model can be regarded as the logistic regression model for dichotomous dyadic outcomes and complements the well-known Social Relations Model (Kenny & La Voie, 1984; Snijders & Kenny, 1999), which is suited for continuous dyadic outcomes.

In the p_2 model, a positive effect of a certain individual or dyadic characteristic can be interpreted as having a positive effect on the probability of a relationship. For instance, in Table 3, a positive *nominator* effect of vulnerability implies that vulnerable children have a higher probability to nominate themselves as victim. Likewise, a negative *target* effect of vulnerability implies that vulnerable children have a lower probability to be nominated as bully. A positive *relationship* effect of dislike implies that the probability of being bullied is higher in a relationship in which the nominator dislikes the target.

Unlike a univariate logistic regression model, the p_2 model controls for dependencies in the network data, namely: differences in nominating (nominator variance) and receiving nominations (target variance), reciprocity, and density between the networks. It is for this reason that the multilevel p_2 model parameters cannot be expressed in terms of odds ratios (OR), whereas the parameters in logistic regression can. To obtain an approximation of the effect size of the multilevel p_2 model parameters in terms of OR, we assume all parameters for network dependency are zero. In the current networks, the bias in the OR induced by assuming zero reciprocity is only minimal because the reciprocity parameters are very small compared (in absolute sense) to the density parameters. The reported OR correspond fairly accurately to estimated probabilities for actors that have an average tendency to give and receive nominations in a network with average density.

Our data had a three-level structure. We collected network data from 54 school classes (Level 3) with 918 individuals (Level 2) and 13,606 dyadic relations (Level 1). We used a multilevel version of the p_2 model that allowed us to analyze multiple networks simultaneously (Zijlstra et al., 2006). These p_2 analyses are time consuming. The estimation took several days per model.

Who Do You Bully? Point of View of the Bully

The results of the multilevel p_2 model analysis with responses to the question "who do you bully?" as the dependent dyadic variable are shown in Table 2. The bully–victim profile hypotheses were that the self-proclaimed bullies are likely to be (a) boys and (b) dominantly aggressive; and they are matched with victims that are likely to be (c) vulnerable, (d) rejected, and (e) not aggressive. The data support these hypotheses. We found that being a boy (OR = 3.35) and being dominantly aggressive (OR = 2.05) increased the likelihood of being a self-proclaimed bully in the dyad. The characteristics of the targeted victims are also as predicted: vulnerable (OR = 1.49) and rejected (OR = 1.35). We found that aggressiveness was not related to being a victim. Thus, taking the other characteristics into account, the results show us that "pure" victims are not likely to be aggressive. The relational hypotheses on liking and disliking were supported. When the nominator liked the target, the likelihood of a bully–victim relationship decreased, and when the target was disliked, the probability of

Table 2
Who Do You Bully? The Bully as Nominator. Parameter Estimates and Odds Ratios (OR) of the Multilevel p_2 Model

Effect	Posterior mean (*SE*)	OR	(95% CI)
Overall mean			
Density	−6.76 (0.28)		
Reciprocity	0.45 (0.38)		
Nominator covariates			
Being a boy	1.21 (0.28)	3.35*	(1.93–5.90)
Aggressiveness	0.72 (0.12)	2.05*	(1.67–2.59)
Vulnerability	0.18 (0.12)	1.20	(0.96–1.50)
Acceptance	0.23 (0.14)	1.26	(0.96–1.65)
Rejection	0.07 (0.15)	1.07	(0.82–1.45)
Being a bully–victim	0.28 (0.34)	1.32	(0.61–2.39)
Target covariates			
Being a boy	0.29 (0.27)	1.33	(0.76–2.20)
Aggressiveness	0.03 (0.08)	1.03	(0.88–1.19)
Vulnerability	0.40 (0.09)	1.49*	(1.27–1.72)
Acceptance	0.10 (0.10)	1.11	(0.90–1.34)
Rejection	0.30 (0.10)	1.35*	(1.11–1.65)
Being a bully–victim	1.75 (0.19)	5.75*	(4.14–8.67)
Relationship covariates			
Girl–girl	Reference		
Boy–boy	−0.61 (0.50)	0.54	(0.21–1.57)
Mixed-sex	0.03 (0.26)	1.03	(0.63–1.79)
Like	−0.72 (0.19)	0.49*	(0.34–0.71)
Dislike	1.53 (0.16)	4.62*	(3.46–6.36)
Random effects			
Class variance	0.56 (0.28)		
Nominator variance	4.49 (0.58)		
Target variance	0.52 (0.15)		
Nominator-target covariance	0.13 (0.26)		

Note. 13,606 dyadic relations from 918 children from 54 Dutch elementary classes.
*$p < 0.01$.

Table 3
By Whom Are You Bullied? The Victim as Nominator. Parameter Estimates and Odds Ratios (OR) of the Multilevel p_2 Model

Effect	Posterior mean (*SE*)	OR	(95% CI)
Overall mean			
Density	−5.76 (0.21)		
Reciprocity	0.66 (0.30)		
Nominator covariates			
Being a boy	−0.09 (0.26)	0.91	(0.54–1.49)
Aggressiveness	0.16 (0.09)	1.17	(0.98–1.39)
Vulnerability	0.59 (0.10)	1.80*	(1.51–2.20)
Acceptance	0.16 (0.11)	1.17	(0.98–1.48)
Rejection	0.34 (0.13)	1.40*	(1.07–1.84)
Being a bully–victim	0.57 (0.31)	1.77	(0.95–3.16)
Target covariates			
Being a boy	1.09 (0.22)	2.97*	(1.95–4.66)
Aggressiveness	0.60 (0.06)	1.82*	(1.58–2.08)
Vulnerability	−0.35 (0.07)	0.70*	(0.61–0.81)
Acceptance	0.20 (0.09)	1.22	(1.02–1.43)
Rejection	0.16 (0.09)	1.17	(0.96–1.38)
Being a bully–victim	1.51 (0.16)	4.53*	(3.39–6.42)
Relationship covariates			
Girl–girl	Reference		
Boy–boy	−0.59 (0.43)	0.55	(0.23–1.35)
Mixed-sex	−0.44 (0.22)	0.64	(0.42–1.02)
Like	−0.49 (0.16)	0.61*	(0.44–0.83)
Dislike	2.36 (0.13)	10.59*	(8.17–13.87)
Random effects			
Class variance	0.13 (0.07)		
Nominator variance	3.55 (0.47)		
Target variance	0.39 (0.12)		
Nominator-target covariance	−0.05 (0.21)		

Note. 13,606 dyadic relations from 918 children from 54 Dutch elementary classes.
*$p < 0.01$.

such a relationship increased. With regard to the alternative hypotheses about the prevalence of boy–boy or boy–girl dyads, we see from Table 2 that the sex composition of the dyad (boy–boy, mixed-sex, or girl–girl) was unrelated to the probability that a bully–victim relationship would occur. As we expected, being a bully–victim was related to being a target but not to being a self-proclaimed bully.

By Whom are You Bullied? Point of View of the Victim

The results of the multilevel p_2 model analysis with responses to the question "by whom are you bullied?" as the dependent dyadic variable are shown in Table 3. The victim–bully profile hypotheses were that self-proclaimed victims were likely to be (a) vulnerable, (b) rejected, and (c) not aggressive; and they were matched with bullies who were likely to be (d) boys, (e) dominantly aggressive, and (f) not vulnerable. The results were largely in support of these hypotheses. As predicted, the self-proclaimed victims are vulnerable and rejected but aggressiveness was unrelated to being a victim. The bullies to whom the self-proclaimed victims are tied were more likely to be boys, dominantly aggressive, and low in vulnerability.

With regard to the relational hypotheses, we see from Table 3 that, again, the liking and disliking expectations were supported. Children who liked their targets were less likely to report them as their bullies, whereas children who disliked their targets were more likely to nominate them as their bullies. We failed to find, again, that bully–victim relationships varied by sex composition of the dyad.

As for the self-proclaimed bullies, we found that for self-proclaimed victims, being a bully–victim was related to being a target but not to being a

self-proclaimed victim. This supports our hypothesis that bully – victims are identified by others but not by themselves as bully – victims. Last, we found in both sets of analyses considerable random actor effects. The nominator variances were larger than the target variances, indicating that the variance among children in nominating is larger (e.g., as a result of a readiness to admit that they are a bully or a victim) than the variance in receiving nominations.

Further Examination of the Results

We checked whether our control for being a bully – victim was valid and ran analyses in which we excluded the 92 bully – victims. These analyses with 826 cases showed highly similar results. Furthermore, we examined whether the effects of aggressiveness, vulnerability, acceptance, and rejection differed for boys and girls. We found no sex interaction effects. This makes sense from the point of view of goal-framing theory. Our hypotheses on covariates were formulated without sex interaction effects because similar goals are likely to create similar behavior in comparable contexts. Finally, we also examined the results for peer acceptance and peer rejection in analyses without the relationship covariates for likes and dislikes. The fit of these models was inferior to those in Tables 2 and 3. The results for peer acceptance remained the same. The effects of peer rejection were in the same direction but much stronger when the relationship covariates were omitted. This supports our expectation that rejection has to do with the likelihood of meeting disapproval from others for being involved in bullying.

Discussion

Some researchers have argued for a conceptualization of the dyad as the unit of analysis to understand relationships among classmates (Coie et al., 1999; Laursen, 2005; Little & Card, 2005; Pellegrini, 1998; Pierce & Cohen, 1995). A focus on individuals in peer dyads (nested within classes) requires a shift to novel methods and data analytic techniques to accommodate this new conceptualization (Dodge, Price, Coie, & Christopoulos, 1990). Once this shift is made, it opens the possibility of investigating differences or complementarity in perspective. In the current study, we investigated the characteristics of the relationship between self-proclaimed bullies and their nominated victims, and vice versa. We generated expectations about these relationships from a goal-framing approach. From the point of view of the potential bully, we traced the likely characteristics that children with a dual status goal (domination and social approval) have and those that they seek in their victims. From the point of view of the potential victim, we traced the likely characteristics that children with a goal to avoid harm have and those that they fear in a bully. Even though we did not assess these goals or their cognitive consequences directly, we were able to generate hypotheses about the characteristics of bully – victim relationships from both perspectives. We hypothesized that the self-proclaimed bullies are perceptive to, and their goal is aroused by, a person they can dominate (i.e., a person who is less aggressive and feels vulnerable) and who is rejected by others, so that the risk of social disapproval is low. The self-proclaimed victims are sensitive to, and their goal is aroused by, a person who they fear will harm them (i.e., a person who is much more aggressive and much less vulnerable). Being more dominantly aggressive than girls, boys were also expected to be more likely bullies (from both perspectives) than girls. The relationships from both perspectives were expected to show considerable complementarity. We tested these expectations using a large data set with binary network data on *who do you bully?* and *by whom are you bullied?*. The results strongly supported the expectations generated from the goal-framing approach.

We found that bullies do indeed have an advantage over the children they victimize by being more dominantly aggressive than their victims. These results were consistent with earlier results at the individual (Vaillancourt, Hymel, & McDougall, 2003) and at the dyadic level (Dodge et al., 1990). This fits with Dodge et al.'s suggestion that bullies, already in middle childhood, value aggression as a means of obtaining a goal and may rely on this tactic more often than nonaggressors because experience has proven it to be successful. It also is in line with the findings of experimental studies showing that aggressive preadolescent boys do not feel bad when causing suffering in a victim, and in fact escalate attacks on victims in order to produce the signs of pain and submission that signal successful domination and control (Perry & Bussey, 1977; Perry & Perry, 1974).

As we expected, bullies pick on targets that are rejected and whom they can bully with impunity. This last point is also consistent with earlier findings at the individual level (Boivin, Hymel, & Bukowski, 1995; Hodges, Boivin, Vitaro, & Bukowski, 1999; Hodges & Perry, 1999). It fits into this picture that, also as expected, the victims were quite vulnerable, that is, they were fearful and isolated. Other researchers have argued that aggregated preference-based measures of social status do not reveal bullies' status advantage

over victims (Boulton, 1999; Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004; Olweus, 2001). We now have more specific knowledge about the status relations. From the bully's perspective, the power advantage is indeed not a status advantage in the sense of social approval but one in the ability to dominate. The theory also specifies that the status difference with the victim based on the number of nominations received for liking and disliking (i.e., acceptance and rejection) is not a power difference. Rather, the victim's rejection is likely to be part of the bully's strategy not to lose (and maybe even to gain) social approval. From the victim's perspective, subjective factors contributing to a feeling of vulnerability (and, therefore, to the importance of the goal of harm avoidance) are the most important. This includes the differential in aggressiveness and in vulnerability between victim and bully. This is also borne out by the results.

In a bully–victim dyad, boys were more often the bullies. We did not find a sex effect for victimization, confirming earlier research at the individual (Espelage et al., 2004; Hanish & Guerra, 2004; Pellegrini et al., 1999; Schwartz, 2000) and the dyadic level (Vermande et al., 2000). There was no preponderance of boy–boy dyads.

Others have shown that bully–victims represent a particularly high-risk group at elementary school age and are at greater risk of future psychiatric problems (Kumpulainen & Rasanen, 2000). Bully–victims can be assumed to be confused about their goals to dominate and to avoid harm and thus do not identify with either role. On this basis, we predicted and found that members of this group (i.e., those nominated as both victim and bully) will not be self-proclaimed bullies or victims. Only their classmates will nominate them as bully or victim. This finding strengthens the goal-framing approach to bullying and victimization.

The dual-perspective approach has a number of advantages. First, it enables identification of two different bully–victim relationships: one generated from the point of view of the self-proclaimed bully and one generated from the point of view of the self-proclaimed victim. These two perspectives were found to be quite complementary, which provides a basis for a theory-driven approach to bully–victim relationships in future research. Second, this complementarity has implications for how to deal with bullying. It suggests that interventions might profitably focus on the dyads and the extra role played by likes and dislikes (e.g., conflict resolution or initiation of conversation in cases of dislike). Discussion of this mechanism may even profitably be addressed to the whole group, as O'Connell et al. (1999) and Salmivalli (2001) have argued. Then, there are some things that can be done from the point of view of the self-proclaimed bully. The two aspects of status that presumably drive self-proclaimed bullies operate quite differently. It is much more difficult to change the goal to be dominant than to influence the social approval for being so. We saw in the multivariate analyses that bullies are on average on peer acceptance, but if that changed into rejection, bullying would in all likelihood be greatly reduced, even for children who crave dominance. For this to come about, the teacher could play an important role by attaching negative status aspects to being a bully and by providing alternative status opportunities for children who are high in domination (Holt & Keyes, 2004). The teacher could also encourage friends to stand up for the victim and attach positive status to this act. It could be shown that not having anybody to stand up for you (i.e., being rejected) is exactly what gets bullying going. A buddy system in which everyone is paired with an other classmate might work (Hektner, August, & Realmuto, 2003). Last, we saw that affective relationships influence all the other effects. Direct likes greatly reduce and direct dislikes greatly increase bullying, from both points of view. Any positive change in the affective climate in the class will thus help reduce bullying. Another approach would be to work directly at changing goals. The goal-framing approach suggests that it is useful to think in terms of relationships of mutually reinforcing goals (domination and harm avoidance), so that bullying should be approached from both sides. Cooperative work among students is likely to reduce the goal to be dominant and could be promoted (Lillard & Else-Quest, 2006), among other things, by helping bullies and those who approve of them (assistants and reinforcers, as Salmivalli et al. (1996) call them) to learn to think from the perspective of the victim and to adopt nurturance as another goal. Conversely, victims could be helped to develop positive interaction goals that would replace the harm avoidance goal. Although more research is needed on bully–victim dyads, our dual perspective opens perspectives for dealing with bullying.

Advantages of our study are that it was based on a large sample of preadolescent boys and girls (and that we examined the possibility of sex interactions), that it covered both bullying and victimization (and that we controlled for pupils who were bully–victims), and that multiple informants were employed. With our multilevel model, we took the hierarchical structure of our data set into account (i.e., dyadic relations among children within classes),

and it was no longer necessary to treat classes as the unit of analysis (Coie et al., 1999) or to perform a meta-analysis on outcomes per class (Baerveldt et al., 2004).

A number of limitations of our study should also be mentioned. First, a cross-sectional correlational design was used. Even though the hypotheses derived from the goal-framing approach were supported by the results, we cannot exclude the possibility that the characteristics on both sides of the dyad may result from involvement in the relationship. Ultimately, the goal-framing processes should be tested with longitudinal data. Second, we only had peer information from a subsample of TRAILS. This subsample excluded children in special education and children who repeated a grade. This probably weakened the detected associations in our analyses and it limits the generalizability of our findings. Third, we did not measure several forms (such as physical, psychological, and verbal) of bullying and victimization, but used general peer nomination items (''Who do you bully?'' and ''By whom are you bullied?''). One-item measures are often used in sociometric research (''Name the persons you like/dislike''), and it should be realized that in the multilevel analyses, our measures were the aggregates of all the nominations a person gave to others (as nominator) or received from others (as target), and are for that reason potentially more reliable and valid than a single-item self-report. Despite these limitations at present, our data offer a unique opportunity to investigate bullying and victimization in dyads, and the dual-perspective theory seems promising.

References

Arsenio, W. F., & Lemerise, E. A. (2001). Varieties of childhood bullying: Values, emotion processes, and social competence. *Social Development*, *10*, 59–73.

Atlas, R. S., & Pepler, D. J. (1998). Observations of bullying in the classroom. *Journal of Educational Research*, *92*, 86–99.

Baerveldt, C., Van Duijn, M. A. J., Vermeij, L., & Van Hemert, D. A. (2004). Ethnic boundaries and personal choice. Assessing the influence of individual inclinations to choose intra-ethnic relationships on pupils' networks. *Social Networks*, *26*, 55–74.

Barkow, J. H. (1989). *Darwin, sex, and status: Biological approaches to mind and culture*. Toronto, Canada: University of Toronto Press.

Boivin, M., Hymel, S., & Bukowski, W. M. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in children. *Development and Psychopathology, 7*, 765–785.

Boldizar, J. P., Perry, D. G., & Perry, L. C. (1989). Outcome values and aggression. *Child Development*, *60*, 571–579.

Boulton, M. J. (1999). Concurrent and longitudinal relations between children's playground behavior and social preference, victimization, and bullying. *Child Development*, *70*, 944–954.

Burgess, K. B., Wojslawowicz, J. C., Rubin, K. H., Rose-Krasnor, L., & Booth-Laforce, C. (2006). Social information processing and coping strategies of shy-withdrawn and aggressive children: Does friendship matter? *Child Development*, *77*, 371–383.

Card, N. A., & Hodges, E. V. E. (2007). Victimization within mutually antipathetic peer relationships. *Social Development*, *16*, 479–496.

Coie, J. D., Cillessen, A. H. N., Dodge, K. A., Hubbard, J. A., Schwartz, D., Lemerise, E. A., et al. (1999). It takes two to fight: A test of relational factors and a method for assessing aggressive dyads. *Developmental Psychology, 35*, 1179–1188.

Cornell, D. G., & Brockenbrough, K. (2004). Identification of bullies and victims: A comparison of methods. *Journal of School Violence*, *3*, 63–87.

De Winter, A. F., Oldehinkel, A. J., Veenstra, R., Brunnekreef, J. A., Verhulst, F. C., & Ormel, J. (2005). Evaluation of non-response bias in mental health determinants and outcomes in a large sample of pre-adolescents. *European Journal of Epidemiology, 20*, 173–181.

Dodge, K. A., Price, J. M., Coie, J. D., & Christopoulos, C. (1990). On the development of aggressive dyadic relationships in boys' peer groups. *Human Development*, *33*, 260–270.

Espelage, D. L., Mebane, S. E., & Adams, R. S. (2004). Empathy, caring, and bullying: Toward an understanding of complex associations. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools: A social-ecological perspective on prevention and intervention* (pp. 37–61). Mahwah, NJ: Erlbaum.

Gilbert, P., & McGuire, M. T. (1998). Shame, status, and social roles: Psychobiology and evolution. In P. Gilbert & B. Andrews (Eds.), *Shame: Interpersonal behavior, psychopathology, and culture* (pp. 99–125). New York: Oxford University Press.

Hanish, L. D., & Guerra, N. G. (2004). Aggressive victims, passive victims, and bullies: Developmental continuity or developmental change? *Merrill-Palmer Quarterly, 50*, 17–38.

Hawley, P. H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review, 19*, 97–132.

Hawley, P. H. (2003). Prosocial and coercive configurations of resource control in early adolescence: A case for the well-adapted Machiavellian. *Merrill-Palmer Quarterly, 49*, 279–309.

Hektner, J. M., August, G. J., & Realmuto, G. M. (2003). Effects of pairing aggressive and nonaggressive children in strategic peer affiliation. *Journal of Abnormal Child Psychology, 31*, 399–412.

Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology, 35*, 94–101.

Hodges, E. V. E., & Perry, D. G. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of Personality and Social Psychology, 76*, 677–685.

Holt, M. K., & Keyes, M. A. (2004). Teachers' attitudes toward bullying. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools. A social-ecological perspective on prevention and intervention* (pp. 121–139). Mahwah, NJ: Erlbaum.

Huberman, B. A., Loch, C. H., & Önçüler, A. (2004). Status as a valued resource. *Social Psychology Quarterly, 67*, 103–114.

Juvonen, J., & Graham, S. (2001). *Peer harassment in school. The plight of the vulnerable and victimized*. New York: Guilford.

Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*, 265–284.

Keltner, D., Young, R. C., Heerey, E. A., Oemig, C., & Monarch, N. D. (1998). Teasing in hierarchical and intimate relations. *Journal of Personality and Social Psychology, 75*, 1231–1247.

Kenny, D. A., & La Voie, L. (1984). The Social-Relations Model. *Advances in Experimental Social Psychology, 18*, 141–182.

Klicpera, C., & Gasteiger Klicpera, B. (1996). Die Situation von 'Tätern' und 'Opfern' aggresiver Handlungen in der Schule [The situation of bullies and victims of aggressive acts in school]. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 45*, 2–9.

Klinger, E. (1975). Consequences of commitment to and disengagement from incentives. *Psychological Review, 82*, 1–25.

Kowalski, R. M. (2000). ''I was only kidding!'': Victims' and perpetrators' perceptions of teasing. *Personality and Social Psychology Bulletin, 26*, 231–241.

Kumpulainen, K., & Rasanen, E. (2000). Children involved in bullying at elementary school age: Their psychiatric symptoms and deviance in adolescence. An epidemiological sample. *Child Abuse & Neglect, 24*, 1567–1577.

LaFontana, K. M., & Cillessen, A. H. N. (2002). Children's perceptions of popular and unpopular peers: A multimethod assessment. *Developmental Psychology, 38*, 635–647.

Laursen, B. (2005). Dyadic and group perspectives on close relationships. *International Journal of Behavioral Development, 29*, 97–100.

Lillard, A., & Else-Quest, N. (2006). Evaluating Montessori education. *Science, 313*, 1893–1894.

Lindenberg, S. (2001). Social rationality versus rational egoism. In J. H. Turner (Ed.), *Handbook of sociological theory* (pp. 635–668). New York: Kluwer Academic/Plenum.

Lindenberg, S. (2006). Prosocial behavior, solidarity, and framing processes. In D. Fetchenhauer, A. Flache, A. P. Buunk, & S. Lindenberg (Eds.), *Solidarity and prosocial behavior. An integration of sociological and psychological perspectives* (pp. 23–43). Berlin, Germany: Springer.

Little, T. D., & Card, N. (2005). On the use of social relations and actor-partner interdependence models in developmental research. *International Journal of Behavioral Development, 29*, 173–179.

Masten, A. S., Morison, P., & Pellegrini, D. S. (1985). A revised class play method of peer assessment. *Developmental Psychology, 21*, 523–533.

Miethe, T. D., & McDowall, D. (1993). Contextual effects in models of criminal victimization. *Social Forces, 71*, 741–759.

Mouttapa, M., Valente, T., Gallaher, P., Rohrbach, L. A., & Unger, J. B. (2004). Social network predictors of bullying and victimization. *Adolescence, 39*, 315–335.

Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113*, 99–128.

O'Connell, P., Pepler, D., & Craig, W. (1999). Peer involvement in bullying: Insights and challenges for intervention. *Journal of Adolescence, 22*, 437–452.

Oldehinkel, A. J., Hartman, C. A., De Winter, A. F., Veenstra, R., & Ormel, J. (2004). Temperament profiles associated with internalizing and externalizing problems in preadolescence. *Development and Psychopathology 16*, 421–440.

Olweus, D. (1978). *Aggression in the schools: Bullying and whipping boys*. Washington, DC: Hemisphere.

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Oxford, UK: Blackwell.

Olweus, D. (2001). Peer harassment: A critical analysis and some important issues. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school. The plight of the vulnerable and victimized* (pp. 3–20). New York: Guilford.

Peets, K., Hodges, E. V. E., & Salmivalli, C. (in press). Affect-congruent social-cognitive evaluations and behaviors. *Child Development*.

Pellegrini, A. D. (1998). Bullies and victims in school. A review and call for research. *Journal of Applied Developmental Psychology, 19*, 165–176.

Pellegrini, A. D., Bartini, M., & Brooks, F. (1999). School bullies, victims, and aggressive victims: Factors relating to group affiliation and victimization in early adolescence. *Journal of Educational Psychology, 91*, 216–224.

Pellegrini, A. D., & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology, 20*, 259–280.

Perry, D. G., & Bussey, K. (1977). Self-reinforcement in high-aggressive and low aggressive-boys following acts of aggression. *Child Development, 48*, 653–657.

Perry, D. G., & Perry, L. C. (1974). Denial of suffering in the victim as a stimulus to violence in aggressive boys. *Child Development, 45*, 55–62.

Perry, D. G., Williard, J. C., & Perry, L. C. (1990). Peers' perceptions of the consequences that victimized children provide aggressors. *Child Development, 61*, 1310–1325.

Pierce, K. A., & Cohen, R. (1995). Aggressors and their victims: Toward a contextual framework for understanding children's aggressor-victim relationships. *Developmental Review, 15*, 292–310.

Rodkin, P. C., & Berger, C. (in press). Who bullies whom? Social status asymmetries by victim gender. *International Journal of Behavioral Development*.

Rodkin, P. C., Farmer, T. W., Pearl, R., & Van Acker, R. (2000). Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology, 36*, 14–24.

Salmivalli, C. (2001). Group view on victimization: Empirical findings and their implications. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school. The plight of the vulnerable and victimized* (pp. 398–419). New York: Guilford.

Salmivalli, C., & Isaacs, J. (2005). Prospective relations among victimization, rejection, friendlessness, and children's self- and peer-perceptions. *Child Development*, *76*, 1161–1171.

Salmivalli, C., Lagerspetz, K., Björkqvist, K., Osterman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior, 22*, 1–15.

Schwartz, D. (2000). Subtypes of victims and aggressors in children's peer groups. *Journal of Abnormal Child Psychology, 28*, 181–192.

Shah, J., & Kruglanski, A. W. (2003). When opportunity knocks: Bottom-up priming of goals by means and its effect on self-regulation. *Journal of Personality and Social Psychology, 84*, 1109–1122.

Shapiro, J. P., Baumeister, R. F., & Kessler, J. W. (1991). A three-component model of children's teasing: Aggression, humor, and ambiguity. *Journal of Social and Clinical Psychology, 10*, 459–472.

Snijders, T. A. B., & Kenny, D. A. (1999). The social relations model for family data: A multilevel approach. *Personal Relationships, 6*, 471–486.

Vaillancourt, T., Hymel, S., & McDougall, P. (2003). Bullying is power: Implications for school-based intervention strategies. *Journal of Applied School Psychology 19*, 157–176.

Van Duijn, M. A. J., Snijders, T. A. B., & Zijlstra, B. J. H. (2004). p_2: A random effects model with covariates for directed graphs. *Statistica Neerlandica*, *58*, 234–254.

Veenstra, R., Lindenberg, S., Oldehinkel, A. J., De Winter, A. F., & Ormel, J. (2006). Temperament, environment, and antisocial behavior in a population sample of preadolescent boys and girls. *International Journal of Behavioral Development*, *30*, 422–432.

Veenstra, R., Lindenberg, S., Oldehinkel, A. J., De Winter, A. F., Verhulst, F. C., & Ormel, J. (2005). Bullying and victimization in elementary schools: A comparison of bullies, victims, bully/victims, and uninvolved preadolescents. *Developmental Psychology, 41*, 672–682.

Vermande, M. M., Van den Oord, E. J. C. G., Goudena, P. P., & Rispens, J. (2000). Structural characteristics of aggressor-victim relationships in Dutch school classes of 4- to 5-year olds. *Aggressive Behavior, 26*, 11–31.

Whiting, B., & Edwards, C. P. (1973). A cross-cultural analysis of sex differences in the behavior of children aged three through 11. *Journal of Social Psychology, 91*, 171–188.

Whitney, I., & Smith, P. K. (1993). A survey of the nature and extent of bullying in junior/middle and secondary schools. *Educational Research*, *35*, 3–25.

Zijlstra, B. J. H., Van Duijn, M. A. J., & Snijders, T. A. B. (2006). The multilevel p_2 model: A random effects model for the analysis of multiple social networks. *Methodology, 2*, 42–47.